SCIENTIFIC ABSTRACT

The development of a safe and effective prophylactic HIV-1 vaccine is a global health priority. We have previously shown that plasmid DNA vaccines augmented by the plasmid IL-2/Ig cytokine adjuvant elicit potent cellular immune responses that can control a pathogenic AIDS virus challenge in rhesus monkeys. The purpose of HVTN 044 is to advance this strategy of cytokine-augmented DNA vaccination into a phase I human trial. We plan to perform a randomized, placebo-controlled clinical trial to determine the safety, tolerability, and immunogenicity of the HIV-1 DNA vaccine VRC-HIVDNA009-00-VP (Gag-Pol-Nef-multiclade-Env) with the plasmid cytokine adjuvant VRC-ADJDNA004-IL2-VP (IL-2/Ig) in HIV-1-uninfected healthy adult participants.

Part 1 of HVTN 044 will involve the combined administration of 4.0 mg VRC-HIVDNA009-00-VP and VRC-ADJDNA004-IL2-VP at doses of 0.5 mg (Group A) and 1.5 mg (Group B). These will be performed in a dose-escalated fashion. If these injections are safe and well tolerated, part 2 of HVTN 044 will involve a direct comparison among 3 groups: 4.0 mg VRC-HIVDNA009-00-VP combined with 4.0 mg VRC-ADJDNA004-IL2-VP (Group C), 4.0 mg VRC-HIVDNA009-00-VP alone (Group D), and 4.0 mg VRC-HIVDNA009-00-VP with the sequential administration of 4.0 mg VRC-ADJDNA004-IL2-VP (Group E). In Group E, the VRC-ADJDNA004-IL2-VP adjuvant will be given 2 days after the vaccine, as this timing resulted in optimal immunogenicity in animal models. The primary endpoint of the study is safety and tolerability. The secondary endpoint is immunogenicity.